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TWENTY YEARS OF ECONOMIC AND INDUSTRIAL CHANGE. SEMINAR ON MANPOWER POLICY AND PROGRAM, 3D.

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THIS CONDENSED TRANSCRIPT OF A SEMINAR DEVOTED TO A REVIEW OF ECONOMIC AND INDUSTRIAL CHANGE CONTAINS THE ADDRESS OF THE PRINCIPAL SPEAKER AND SOME SUBSEQUENT DISCUSSION. THE ADDRESS EXAMINES MAJOR RECENT TRENDS IN THE GROSS NATIONAL PRODUCT, IN PRIVATE INVESTMENT AND GOVERNMENT EXPENDITURES, IN THE LABOR FORCE AND EMPLOYMENT PATTERNS, AND IN NATIONAL PRODUCTIVITY. THIS DOCUMENT IS ALSO AVAILABLE FROM THE U.S. DEPARTMENT OF LABOR'S MANPOWER ADMINISTRATION, WASHINGTON, D.C. AND ITS REGIONAL INFORMATION OFFICES LISTED AT THE END OF THE DOCUMENT. (NH)

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SEMINAR ON MANPOWER POLICY AND PROGRAM
APRIL 1965

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Twenty Years of Economic and Industrial Change

By ROBERT A. GORDON

OPENING REMARKS

Chairman—Dr. John P. Walsh, Acting Director
Office of Manpower, Automation and Training

DR. WALSH: Welcome to the third Seminar on Manpower Policy and Program on behalf of the Manpower Administration of the U.S. Department of Labor and the Office of Manpower, Automation and Training, which has been given the responsibility for organizing the series.

I think it is important to recognize that in this group today we have representatives of several departments of government. Originally we thought we would set up a series of seminars for senior officials in the Department of Labor. But as we began to make the plans for the program we found that the interest in manpower policy and program goes much beyond the realm of the Department of Labor. Hence, we have with us today Mr. Robert Goodwin, the Administrator of our Bureau of Employment Security in the Department; Mr. James Clarke, the representative of the Under Secretary of the Department of Health, Education, and Welfare; and people from the Department of Defense, the Budget Bureau, the Department of Commerce, and many others from the private sector as well.

We also have a distinguished gentleman with us to act as moderator. Dr. Herbert Stein is the Director of Research of the Committee for Economic Development and has been with the research staff of the committee since 1945. Before that he served as an economist in several agencies of government.

Dr. Gordon, our speaker today, is an individual who I think can rightfully claim to stand before such a group and

present judgments on economic and industrial change. He was formerly chairman of the Department of Economics of the University of California at Berkeley and is currently serving as professor there. Dr. Gordon has been active in a number of committees dealing with severe policy problems at government level and is probably best known as the man people recognize when the "Gordon committee" is referred to. As most of us know, he was chairman of the President's Committee to Appraise Employment and Unemployment Statistics.

It is a pleasure for me to present Dr. Robert Gordon, who will sepak to you on 20 years of economic and industrial change.

TWENTY YEARS OF ECONOMIC AND INDUSTRIAL CHANGE

An Address by Dr. Robert A. Gordon

DR. GORDON: Thank you very much, Dr. Walsh, and thank you all for being here.

It is probably taken for granted that during the last 20 years we have been living through a scientific and technological revolution, or the new industrial revolution, as it is frequently called. We point to such developments as nuclear energy, electronics, jet propulsion, breathtaking advances in applied chemistry, new forms of electronic mechanization that we call automation, and startling accomplishments of the new computers and data processing equipment which, among other results, are bringing automation to the office. And we can go on and on. We know that science and technology are affecting our everyday lives and the affairs of business as never before.

The letters "R" and "D" have taken on a new significance, and expenditures for research and development in industry, government, and private nonprofit institutions have mounted astronomically. One might say that the good space ship "R&D" is already far out on its way to the moon and to destinations even more distant.

This new technological world, with its promise and its portents for the future, is indeed breathtaking. But my assignment is not to peer into the future but to look back at the behavior and changing structure of the economy during the past 20 years. Let us look at some of the major trends since the end of the 1930's that we can discern.

A good place, almost a trite place, to begin is with the size and composition of the gross national product. As we already know, accelerating technological change has not yet led to noticeable acceleration in the growth of total output of the American economy. Indeed, in the last 6 years, we have chiefly heard complaints about slow growth in this regard. Table 1, which you have before you, provides some perspective on the trends in the growth of total output in the American economy during the past half century.

Table 1. Average Annual Growth Rates in GNP, in 1954 Prices, Selected Periods, 1909–63[1]

Period	Annual rate of growth (percent)
1909–29	2.8
1929–39	.4
1939–47	5.1
1947–57	3.8
1957–63	3.2
1929–63	3.0
1939–63	4.1
1947–63	3.5

[1] Growth rates up to 1957 computed by Committee for Economic Development. Those for periods ending in 1963 computed by the author from data in *Economic Report of the President*, January 1964.

If we take the entire period since 1939, the average annual rate of growth was a gratifying 4.1 percent per year, considerably higher than during 1909–29. But part of this represented merely putting to work the millions who were still unemployed in 1939. It is more useful to take the period 1947–63, the postwar period, which yields a growth rate of 3.5 percent, still significantly higher than during 1909–29 although not as high as the 4-percent rate which is sometimes put forward as a goal to which we should aspire.

When we break the postwar period into two sub-periods divided by the year 1957 (and this dividing year 1957 will come up frequently in the discussion), we see why the supposed slow growth of the American economy has become a subject of popular debate. The growth rate during the last 6 years has been significantly less than during the first decade after the war. And this deceleration has been accompanied by considerable excess capacity in industry and by a distressingly high average level of unemployment. There has been some pickup during the last year and a half. But the growth from 1957 to 1962 averaged only 2.9 percent.

It will help us to understand why this deceleration has occurred if we look at the changing composition of the GNP portrayed in table 2. Something like two-thirds of the GNP normally goes into goods and services bought by consumers. The fraction fell moderately between 1939 and 1947 and again between 1947 and 1957, primarly because of the effect of increased personal income taxes. As table 2 suggests, consumers' spending has held up relatively well since 1957. Its share of total GNP has actually increased a bit.

Table 2 suggests that there have been some significant shifts among the major classes of consumers' expenditures. Spending on consumers' durables has increased in relative importance as a fraction of GNP and, even more, as a share of consumers' expenditures. The share of GNP taking the form of nondurable goods expenditures has declined significantly.

The share going to services traces out an interesting path. It may come as a surprise to many that as a share of total GNP, services showed a net decline between 1929 and 1947. And even last year, again as a share of total GNP, services were no greater than in 1929. We must remember, however, that total consumers' spending is now a smaller share of GNP than in 1929 or 1947. There has been a marked rise since 1947 in the proportion of consumers' spending going into services, and this fraction is now moderately higher than it was in 1929. But, to repeat, from the point of view of the economy as a whole, the overall decline in consumers' spending as a share of GNP has kept services' share of GNP from rising significantly above what it was 35 years ago.

Table 2. Percent Distribution of the Major Components of Gross National Product, Selected Years, 1929–63[1]

Year	Personal consumption expenditures				Gross private domestic investment			Government purchases of goods and services		
	Total	Durable goods	Nondurable goods	Services	Total	Total construction	Producers' durable equipment	Total	Federal	State and local
1929 -------	70.5	8.2	35.9	26.4	19.3	11.5	6.1	10.2	1.6	8.6
1939 -------	72.5	7.0	40.5	24.9	11.4	6.4	4.5	15.9	5.8	10.1
1947 -------	69.3	8.3	37.3	23.7	14.7	7.0	7.7	13.2	6.9	6.3
1957 -------	66.4	9.4	32.5	24.5	14.2	7.8	6.0	18.5	10.6	7.9
1963 -------	66.8	9.9	30.7	26.2	13.7	7.6	5.2	19.0	10.3	8.8

[1] Each figure represents the percent that the indicated component was of total GNP in the year indicated. Net exports are not shown. Original figures, on which these percentages are based, are in 1954 prices and were taken from *Economic Report of the President*, January 1964.

Let's now turn to recent trends in private investment or capital formation. It is through investment in new buildings and particularly, new equipment that technological advances come to be embodied in new products and new methods of production. The picture revealed by table 2 is not altogether encouraging. Throughout the postwar period, private capital formation has been a much smaller fraction of GNP than it was in 1929. The great increase in the relative importance of government since the 1930's has been, to a considerable extent, at the expense of private investment. This we accept as a price of national security. What is more alarming is that the fraction has continued to slip in recent years. The share of capital formation in GNP was lower in 1963 than it was in 1957, and the share in 1957 was lower than in 1947. There has, however, been an encouraging pickup in planned investment expenditures in recent months.

Table 2 brings out another disconcerting fact about recent trends in private investment. As a share of GNP, it is expenditures on producers' durable equipment that have been particularly sagging in recent years. We may indeed be in the midst of a new industrial revolution. But if so, it does not yet reveal itself in a big upsurge of business expenditures on new equipment.

The trends in government expenditures revealed in table 2 are, in a general way, familiar to everyone. All levels of government today absorb about a fifth of total GNP, compared with 10 percent in 1929, 16 percent in 1939, and 13 percent in 1947. The big relative rise, of course, has been in Federal expenditures. National security accounts for all of this. As a fraction of GNP, Federal expenditures on goods and services other than for national defense were lower in 1963 than in 1947. Note also that since 1957 there has been a net decline in the ratio of total Federal spending to GNP.

Let us take a brief look at the trend in State and local expenditures. While the share of such expenditures in GNP has risen significantly since 1947, the fraction is still very little above where it stood in 1929. One useful calculation to make is to compute State and local expenditures as a share of GNP after Federal expenditures are deducted. In percentage terms this figure was 8.6 in 1929; it jumped to 10.1 in

1939. It had fallen to 6.3 percent by 1947, and it has been rising steadily since then until it is now at 8.8 percent of GNP minus Federal expenditures.

Let us now look at growth rates from a different point of view and turn to table 3, which presents the results of some important recent research conducted by the U.S. Department of Commerce, and tells us how fast the different industrial sectors of the economy have grown during various periods since 1929. The most rapid rates of growth since 1947 have been in communications, in public utilities, and in the service group. Since 1957 retardation has been almost universal. Only the service group has escaped such retardation. In the most recent period, manufacturing has not been expanding as rapidly as GNP as a whole. Again, all of this does not quite fit into a picture of a new industrial revolution which is causing a tremendous spurt in output and productivity.

Table 3. Rates of Growth in GNP by Industrial Sectors, Selected Periods, 1929–62[1]

Industrial sector	Annual rates of growth (percent)		
	1929–47	1947–57	1957–62
All industries, total GNP	2.5	3.8	3.0
Agriculture, forestry, and fisheries	0.4	2.0	1.3
Mining	.9	2.8	.0
Contract construction	1.2	4.7	–.6
Manufacturing	3.4	3.6	2.6
Wholesale and retail trade	2.5	3.0	2.6
Transportation	4.2	1.8	1.4
Communications and public utilities	4.1	8.8	6.3
Finance, insurance, real estate, and services	1.5	4.0	4.2
Government and government enterprises	4.3	3.8	2.4

[1] Based on data in *Survey of Current Business*, October 1962, pp. 9, 13; September 1963, p. 10.

How have these trends in output and spending reflected themselves in employment and unemployment? After World War II the total labor force grew somewhat more rapidly than the population of working age. Labor force participation rates increased, reflecting, particularly, the increased entry of married women into the labor force. This trend can be observed in table 4, which indicates that the labor force participation rate rose from 57.4 percent in 1947 to 58.7 percent in 1957. (The peak rate of 59.3 percent was actually reached in 1956, not shown in the table.) Since then, however, the participation rate has slowly fallen. The high level of unemployment in the last 6 years has depressed labor force participation among older persons, the unskilled and those with less education, and nonwhites. Of course, increased schooling and changes in social security and private pension plans have also affected participation rates. And as you know, these recent trends led the Department of Labor, a couple of years ago, to revise downward some of its predictions on the labor force for 1975.

Table 4. Labor Force, Employment, and Unemployment, Selected Years, 1929–63[1]

Year	Total labor force	Civilian labor force		Labor force participation rate	Rate of unemployment
		Employment	Unemployment		
	Millions of persons 14 years and over			Percent	
1929	49.4	47.6	1.6	[2]	3.2
1939	55.6	45.8	9.5	[2]	17.2
1947	61.8	57.8	2.4	57.4	3.9
1957	70.7	65.0	2.9	58.7	4.3
1963	75.7	68.8	4.2	57.3	5.7

[1] Based on data from *Economic Report of the President*, January 1964, p. 230.
[2] Data not available.

We are all aware of the fact that unemployment has been at disturbingly high levels since the business recession of 1957–58. We tend to think of "full employment" as corresponding to an unemployment rate of 4 percent. On an annual basis unemployment has not been as low as 4 percent since 1953, a decade ago. It was 4.3 percent in 1957, our last year of close to full employment. Since then the annual figure has not fallen below 5.5 percent; it was 5.7 percent in 1963.

Thus, for at least 6 years the American economy has been operating at levels considerably short of full employment. A vigorous debate still goes on, as you know, as to the extent to which this unsatisfactory performance is due to deficiency of aggregate demand and the extent to which it is due to structural difficulties—particularly the imbalance between the skills and training of those looking for jobs and the skills and training called for by the considerable number of vacancies that are available. Almost certainly, both sets of factors are at work. There has been, and is now, a significant deficiency of aggregate demand—a deficiency which, it is hoped, the direct and indirect effects of this and next year's tax reductions will do much to eliminate.

But it seems to be fairly clear also that the unemployment problem has an important structural dimension arising out of the fact that many of the unemployed do not have the skills and training, or are not in the right places, or do not have the color of skin needed to satisfy employers who do have vacancies. As we shall see later, however, it is not clear how much worse this problem has become. It was already serious in the midfifties, and indeed, long before that.

With the help of table 5, let us consider trends in labor productivity, first in the economy as a whole and then in different sectors. During the postwar period as a whole, labor productivity has risen at a relatively high, although not unprecedented, rate. For the private domestic economy, excluding government, the rate of increase has been in the neighborhood of 3 percent, which is significantly higher than the average increase, say, over the last half century.

Table 5 suggests that a significant retardation in the overall rate of productivity increase occurred after 1953. Examination of annual data not presented here indicates that this retardation occurred during the period 1953–60. Productivity increase has accelerated again since 1960. These trends have held for both the private economy as a whole and for the nonagricultural sector taken by itself.

Table 5. Average Annual Percent Change in Output Per Man-Hour, Selected Periods, 1947–63

Sector	Average annual percent change		
	1947–63	1953–63	1957–63
Total private economy:			
Output per man-hour	3.0	2.8	3.1
Output	3.4	3.0	3.5
Man-hours	.4	.2	.4
Agriculture:			
Output per man-hour	5.7	5.0	4.9
Output	1.4	1.0	1.3
Man-hours	–4.1	–3.8	–3.4
Nonagricultural industries:			
Output per man-hour	2.4	2.4	2.8
Output	3.6	3.1	3.6
Man-hours	1.1	.7	.8

SOURCE: *Manpower Report of the President*, March 1964, p. 49.

It is worth noting that so far as increase in man-hour productivity is concemed, the period of high unemployment breaks down into two sub-periods: The interval 1957–60 was a period of high unemployment but of retarded productivity increase compared to 1947–53. Unemployment was equally high during 1960–63 when the rise in output per man-hour accelerated again. So, we have trouble in associating in any simple and obvious way high unemployment merely with the rate of increase in productivity.

When we speak of the new industrial revolution, it is naturally industry that we think of, and that means chiefly

manufacturing, but also mining, probably also the public utilities, and perhaps some branches of transportation. It may come as something of a shock, therefore, to note from table 5 that by far the largest increases in productivity in the postwar period have come in agriculture, not in industry. We have truly been experiencing an agricultural revolution since the 1930's. Since 1947 agricultural output per man-hour has increased at a rate almost twice that in the nonagricultural sector and also more than twice that in manufacturing alone. This differential, however, has narrowed in the last 6 or 7 years. The results of this enormous increase in agricultural productivity are well known: Large agricultural surpluses and the "farm problem" on the one hand, and a sharp decline in agricultural employment and an exodus to the cities on the other.

In the nonagricultural sector, productivity has tended to rise more rapidly in manufacturing than in nonmanufacturing, although productivity in some nonmanufacturing sectors has, of course, also risen very rapidly. And productivity has, on the average, risen somewhat more rapidly in the industries producing goods than in those producing services. On the other hand, output has been expanding more rapidly in the service industries than in the goods-producing sector.

This combination of contrasting relative trends in output and in productivity has had a marked effect on the distribution of available jobs. There has been a marked shift in employment away from manufacturing and mining and toward the service industries. And, as is well known, there also has been a striking shift from blue-collar to white-collar jobs.

Some of these trends in the distribution of employment can be discerned in tables 6 and 7. Table 6 shows the marked decline in the relative importance of manufacturing employment since 1947, the even more radical decline in mining, and the significant decrease in transportation and public utilities. In absolute terms, employment in manufacturing increased by about one and a half million, or 10 percent, between 1947 and 1957, but showed a 2.5 percent net decline from 1957 to 1962. Even after some increase last year, manufacturing employment in 1963 was not yet back to the level of 1956–57. The big relative gains in employment have been in the service industries, and, of course, in government.

Table 6. Wage and Salary Workers in Nonagricultural Establishments as Percent of Total Wage and Salary Workers, Selected Years, 1929–63[1]

Industrial sector	1929	1939	1947	1957	1963
Total wage and salary workers	100.00	100.00	100.00	100.00	100.00
Manufacturing	34.15	33.57	35.43	32.46	29.79
Mining	3.47	2.79	2.18	1.57	1.11
Contract construction	4.78	3.76	4.52	5.53	5.30
Transportation and public utilities	12.50	9.59	9.49	8.02	6.84
Wholesale and retail trade	19.54	20.99	20.40	20.58	20.75
Finance, insurance, and real estate	4.82	4.77	4.00	4.68	5.01
Service and miscellaneous	10.98	11.49	11.51	12.76	14.52
Government (Federal, State and local)	9.78	13.05	12.47	14.41	16.67

[1] Based on data from *Economic Report of the President*, January 1964.
NOTE: Because of rounding, sums of individual items may not equal totals.

Table 7 throws some more light on employment trends during the last 20 years. Here we can trace the rise and decline of particular occupations. The most striking change, as we should expect, is in the increased importance of white-collar workers—from 31 percent of the working population in 1940 to 42 percent in 1960. Within the white-collar group the most striking increases have been in the professional-technical and in the clerical categories. As we have been led to expect, manual workers, particularly unskilled laborers, have declined in importance. It is not surprising to note the growing importance of service workers, or the relative decline in private household workers since 1940.

The most dramatic figures in table 7 are those for farm workers, who have declined from 17 percent of the working population in 1940 to a little over 6 percent in 1960. The number of farmers in the United States has been reduced by more than 60 percent in one generation.

Table 7. Percent Distribution of the Working Population by Major Occupation Groups, 1940, 1950, and 1960

Major occupation group	1960	1950	1940
Total	100.0	100.0	100.0
White-collar workers	42.2	36.6	31.1
Professional, technical, and kindred workers	11.4	8.6	7.5
Managers, officials, and proprietors, excluding farm	8.5	8.7	7.3
Clerical and kindred workers	15.0	12.3	9.6
Sales workers	7.4	7.0	6.7
Manual and service workers	51.5	51.6	51.5
Manual workers	39.7	41.1	39.8
Craftsmen, foremen, and kindred workers	14.3	14.1	12.0
Operatives and kindred workers	19.9	20.4	18.4
Laborers, except farm and mine	5.5	6.6	9.4
Service workers	11.8	10.5	11.7
Private household workers	2.8	2.6	4.7
Service workers, except private household	9.0	7.9	7.1
Farm workers	6.3	11.8	17.4
Farmers and farm managers	3.9	7.4	10.4
Farm laborers and foremen	2.4	4.4	7.0

SOURCE: U.S. Bureau of the Census.

One aspect of the impact of recent industrial trends on the pattern of employment opportunities is strikingly brought out in table 8. During the first postwar decade, when total nonagricultural employment increased by over 9 million, manufacturing provided about as many new jobs as did the service industry. In the decade ending in 1957, all industrial sectors except mining contributed to the total increase in employment, although the contribution was very small in the transportation and public utilities group.

Contrast this with the situation after 1957, particularly during 1957–60. The total increase in employment averaged only half a million a year during 1957–60 compared to an annual average increase of about 900,000 during the preceding decade. During 1957–60, government and the service industries alone accounted for more than the net increase in wage and salary workers in the economy as a whole. Or to put it another way, four sectors—manufacturing, mining, construction, and transportation and public utilities—experienced an absolute decline in employment that added up to about half the net increase that occurred in the country as a whole. Or to state the matter in yet a final way, of the total increase that occurred in the sectors with expanding employment, one-third was offset by the actual decline in employment that occurred in these four sectors with declining employment.

Considerable improvement occurred during 1960–63, although not enough to reduce the overall unemployment rate. The annual increase in wage and salary workers almost doubled compared to 1957–60. Manufacturing and construction employment again increased, although still at a much lower rate than during 1947–57. In mining and in transportation and public utilities, employment continued to decline although at a retarded rate. Among the rapidly expanding sectors there was a sharp acceleration in the expansion of employment in the service industries. The last four sectors listed in table 8 accounted for "only" a bit over 90 percent of the net increase in employment, compared to about 150 percent of the net increase in employment during 1957–60. While still acute, the problems created by the changing industrial pattern of demand for labor have been a bit less severe during the last 3 years than during 1957–60.

Let us tum now from a look at differential trends in employment to an analysis of the differential incidence of unemployment. We are all familiar with the very wide spread in unemployment rates among different segments of the labor force. Thus in 1963, when the overall unemployment rate averaged 5.7 percent, the rate was no less than 15.5 percent for male teenagers, 12.1 percent for laborers, and 10.9 percent for nonwhites. In contrast, it was only 3.4 percent for married men, 1.8 percent for professional and technical workers, and 4.7 percent for white males.

Table 8. Industrial Composition of Increases in Number of Nonagricultural Wage and Salary Workers, Selected Periods, 1947–63[1]

Industrial sector	Net increase in employment					
	1947–57		1957–60		1960–63	
	Total (thousands)	Percent	Total (thousands)	Percent	Total (thousands)	Percent
Total	9,023	100.00	1,466	100.00	2,813	100.00
Manufacturing	1,629	18.05	–378	–25.78	240	8.53
Mining	–127	–1.41	–116	–7.91	–78	–2.77
Contract construction	941	10.43	–38	–2.59	148	5.26
Transportation and public utilities	75	.83	–237	–16.17	–90	–3.20
Wholesale and retail trade	1,931	21.40	505	34.45	472	16.78
Finance, insurance, and real estate	723	8.01	192	13.10	197	7.00
Service and miscellaneous	1,699	18.83	643	43.86	912	32.42
Government (Federal, State and local)	2,152	23.85	894	60.98	1,013	36.01

[1] Based on data from *Economic Report of the President*, January 1964, p. 237.
NOTE: Because of rounding, sums of individual items may not equal totals.

It is generally assumed that these contrasts have widened relatively since the midfifties as the result of technological change and the altered patterns of demand, which have contributed to the changes in composition of employment which we have already examined. This immediately gets us into the debate that still goes on as to the relative importance of structural forces and deficient demand as factors responsible for the high level of unemployment since 1958. No one, however, has yet come up with a generally accepted definition of structural unemployment or with an acceptable way of measuring it.

I wonder how much argument there would be in this group with the following propositions. First, the existence of structural employment implies a heterogeneous labor force in which there are sectors from which workers cannot easily and quickly move into other sectors in search of jobs. Second, in some or all of these sectors with impaired mobility, unemployment significantly exceeds available vacancies, while in other sectors vacancies exceed or equal unemployment. And because of inadequate mobility, labor supply does not easily adjust to the inadequate level of demand in particular sectors. Hence, unemployment rates are higher in these sectors than in the economy as a whole, and such differentially high unemployment rates tend to persist for relatively long periods.

Now, these two propositions are not enough to permit us to make a clear separation between structural unemployment and unemployment resulting from inadequate demand, but they do suggest the following corollaries. First, the persistence of differentially high unemployment rates in particular sectors over long periods, covering years of booming activity as well as years of recession, indicates a chronic, or if you will, structural, inability of the labor force to adjust to the existing pattern of labor demand. In this sense, differentially high unemployment rates that persist suggest that total unemployment has a structural component.

The second corollary is as follows. The contrast between the pattern of the labor force by age, occupation, color, and so on, on the one hand, and the corresponding pattern of unemployment, on the other, ought to tell us something about the degree of seriousness of the structural problem and whether it has been getting better or worse or remaining about the same. Differentially high unemployment rates that persist over the years mean that the labor force is failing to adjust adequately to the composition of the demand for labor.

These considerations suggest that we might profitably study the difference between the contribution that a particular group makes to total unemployment and the same group's share of the labor force. If the group's unemployment rate is higher than the national average, its share of total unemployment will be greater than its share of the labor force. Indeed, its share

of total unemployment is nothing more than its share of the labor force multiplied by the ratio of its unemployment rate to the national rate.

Now, if you will forgive me, I will go to the blackboard.

Thus, if we will let the capital letter "U" stand for unemployment, "L" for the labor force, and use the subscript "i" to represent a particular labor group, such as teenagers or unskilled workers, we can write the following: Any group's share of total unemployment is determined by its share of the labor force multiplied by the ratio of its unemployment rate to the national unemployment rate. Now, if we will subtract "Li" over "L" from each side of the equation, we get with a little combining, $\frac{Li}{L}\left[\left(\frac{Ui}{Li} \div \frac{U}{L}\right) - 1\right]$. That is, the difference between a group's relative contribution to total unemployment and its contribution to the labor force is equal to its contribution to the labor force multiplied by the amount by which the ratio of its unemployment rate to the national rate exceeds unity.

If its unemployment rate exceeds the national rate this measure will be positive. In the opposite case it will be negative. I suggest that if this measure is persistently positive over a long period, it is a reasonable inference that what we loosely mean by structural unemployment does exist. If this measure steadily rises over a succession of business cycles I should be prepared to accept this as evidence of worsening structural unemployment.

Now, with this methodological introduction, let us turn to table 9, which applies my measure to those segments of the labor force in which structural unemployment has presumably worsened since the midfifties. Figures are given for 3 years. 1948 was the year of lowest unemployment in the first postwar business cycle. 1956 was the year of lowest unemployment during the boom of 1955–57, after which our so-called structural problems presumably began. 1963 is merely the last calendar year available. Let us look first at blue-collar workers. We have seen that there has been a marked shift toward white-collar and service occupations. Has there been a resulting increase in structural unemployment among blue-collar workers? I think that most people would be prepared to say "yes" right now.

Table 9. Relative Contributions to Unemployment and to the Labor Force of Selected Groups, Selected Dates, 1948-63

Selected groups	Percent share of each group								
	In labor force			In unemployment			Difference		
	1948	1956	1963	1948	1956	1963	1948	1956	1963
Blue-collar	40.8	39.3	36.6	52.0	52.6	46.8	11.2	13.3	10.2
Operatives	21.0	20.1	18.4	26.0	28.5	24.1	5.0	8.4	5.7
Laborers	6.1	5.9	5.5	14.0	12.8	11.8	7.9	6.9	6.3
Industry[1]	41.3	39.8	38.3	46.9	47.4	42.5	5.6	7.6	4.2
Manufacturing	27.2	26.1	25.6	28.0	29.0	25.6	.8	2.9	.0
Transportation and public utilities	7.7	7.0	6.3	6.8	4.5	4.3	−.9	−2.5	−2.0
Nonwhite[2]	([3])	10.7	11.1	([3])	21.5	21.2	([3])	10.8	10.1
No previous work experience	.3	.4	.8	8.8	10.4	14.8	8.5	10.0	14.0
Age 14 to 19	8.6	7.8	8.6	20.1	20.0	23.5	11.5	12.2	14.9
	1950	1957	1962	1950	1957	1962	1950	1957	1962
Years of schooling:									
0 to 8	45.3	36.3	29.6	55.5	50.9	41.5	10.2	14.6	11.9
9 to 11	19.1	19.6	19.6	21.2	22.8	25.7	2.1	3.2	6.1
12	21.2	26.2	28.7	15.6	19.3	22.9	−5.6	−6.9	−5.8
More than 12	14.3	17.9	22.1	7.4	7.1	9.8	−6.9	−10.8	−12.3

[1] Industry includes mining, manufacturing, construction, and transportation and public utilities.

[2] Data for 1948 have not been officially released.

[3] Data not available.

SOURCE: Based on data originally presented in R. A. Gordon, "Has Structural Unemployment Worsened?", *Industrial Relations*, vol. 3, May 1964, pp. 53–77, with some updating from *Manpower Report of the President*, March 1964.

The story told by the first three lines of table 9 is a striking one. The first point to bring out is the familiar one: the blue-collar group, year in and year out, represents a much larger fraction of total unemployment than it does of the labor force. In this sense, this segment of the American working population has always been bedeviled by some degree of structural unemployment. But now, we come to the part of the story that is surprising. The last three columns of table 9 suggest that structural unemployment among blue-collar workers increased not after but before 1956. Look at this group's percentage contribution to total unemployment minus its percentage contribution to total labor force, and compare the figures for 1948 and 1956, on the one hand, and those for 1956 and 1963, on the other. The blue-collar contribution to unemployment in excess of its share of the labor force rose from 11.2 to 13.3 percent between 1948 and 1956, but then it declined from 13.3 in 1956 to 10.2 in 1963. This is just the opposite of what we would have expected from the usual argument about increasing structural unemployment among blue-collar workers.

The next line of table 9 tells the same story. Our measure of structural unemployment for semiskilled operatives rose between 1948 and 1956, when overall unemployment tended to be at a reasonably low level, and it fell from 8.4 to 5.7 during the 7 years of high unemployment after 1956. If there was a worsening of structural unemployment in this group, it came before, not after 1957.

The story is a bit different for unskilled laborers. Here our measure suggests a moderate decline in structural unemployment before, as well as after 1957. Let me repeat again what these figures mean. Each of the groups thus far discussed made a smaller relative contribution to total unemployment in 1963 than in 1956, and in each case the relative decline was greater than in the group's share of the labor force. Either one or both of two things must have happened. Either unemployment rates for these groups rose less than for the labor force as a whole, or their share of the labor force must have fallen enough to lead to the observed decline in their shares of total unemployment.

Actually, the unemployment rates for these occupations moved pretty much in line with the national rate. Our observed results stem primarily from the fact that these groups have been accounting for a rapidly declining share of the labor force since 1957. This suggests to me more labor mobility than is implied in the usual formulation of the structural argument.

The next three lines in table 9 move on to an industrial classification. The impact of technological change on unemployment is supposed to have been most serious in manufacturing and, more broadly, in "industry"—including mining, construction, and transportation and public utilities, as well as manufacturing. We saw earlier that the trends in employment in these sectors have indeed been disappointing since the midfifties.

Here again table 9 presents a picture which is the opposite of general impressions. Whether we take all of "industry"—that is, mining, manufacturing, construction; and transportation and public utilities combined—or whether we look at manufacturing alone, we get the same story. Our figures show a decline in structural unemployment after 1957, not an increase. Both all industry and manufacturing alone accounted for smaller fractions of total unemployment in 1963 than in 1957, and these declines in percentage contributions to total unemployment were greater than the reductions in their shares of the total labor force. If there was increasing structural unemployment in these industrial sectors, it seems to have occurred before, rather than after 1957. This is not the way most observers have been interpreting postwar economic history.

Let us now look at nonwhites. Here again the story is the same. According to table 9, there has been no relative deterioration in the unemployment situation among nonwhites since 1957. Marked relative deterioration did occur in the first postwar decade, that is, before 1957. But further relative worsening did not continue into the period of high overall unemployment after 1957. From 1956 to 1963 the nonwhite share of the labor force rose from 10.7 to 11.1 percent, but its share of total unemployment actually declined slightly.

So far, the figures cited from table 9 all argue strongly against the structuralist interpretation of recent unemployment history. But there is still some more of the story to be told. Let us look, therefore, at the next line dealing with those with no previous work experience. Here there has been a clear-cut worsening since 1956. Data are not shown on the table but from 1947 to 1958 those seeking their first jobs constituted from about 6 to about 10 percent of the unemployed. The figure rose to 11.6 percent in 1959 and has continued to climb steadily since then. It was almost 15 percent in 1963. It would seem that the burden of the deteriorating job market since the midfifties has fallen relatively more heavily on those seeking their first jobs than on experienced workers.

The structural changes that have occurred have not resulted in the relatively growing unemployment of experienced blue-collar workers who cannot find jobs. A variety of forms of job security tend to protect the experienced worker, and the gradual reduction in the proportion of the labor force employed in certain occupations has been effected through natural attrition, rather than through wholesale firings. As a result, it has become increasingly difficult for new entrants into the labor force to find their first job. So far as I can tell, the relative increase in the number of first job seekers among the unemployed represented young adults as much as teenagers until very recently. The situation seems to have changed just in the last year or so.

At this point we need to look at the record for teenagers. Contrary to general impressions, the relative position of teenagers had not deteriorated through the year 1962. Thus, teenagers constituted 20.4 percent of the unemployed in 1962 compared to 20 percent in 1956. But there was a marked worsening in 1963. As shown in table 9, the teenage share of total unemployment jumped to 23.5 percent, and our measure of structural unemployment, which had ranged between roughly 11 and 12 percent through 1962, suddenly shot up to 14.9 percent. The reasons for the suddenness of this deterioration are not yet altogether clear.

Let me conclude this discussion of unemployment trends by brief references to the factor of education, which has been

strongly emphasized by Professor Charles Killingsworth, who, I gather, will be speaking in this series of seminars later in the year on the subject of structural unemployment. This brings me to the last four lines of table 9.

The story for those who have not gone beyond grammar school is rather surprising. This group in 1962 constituted only 41.5 percent of all unemployed, compared to 50.9 percent in 1957 and 55.5 percent in 1950. Since 1957, this group's contribution to total unemployment has declined more than its share of the labor force, so that our measure of structural unemployment actually declined for these most poorly educated.

For the high school dropouts, those with 9 to 11 years of education, there has been some deterioration since 1957. However, there was also relative deterioration among high school graduates, whose share of unemployment rose faster than their share of the labor force. The negative signs in our third set of columns reflect differential advantages, that is, relative contributions to unemployment smaller than corresponding shares of the labor force. The relative position of those with some education beyond high school continued to improve after 1957, although rather less rapidly than before.

If we use high school completion as the dividing line and compare the first two educational groups with the last two, we get the following results. The structural measure for the first two groups with less than 12 years of schooling rose slightly from 17.8 to 18 percent between 1957 and 1962, hardly a striking change. There was a corresponding very slight improvement for those who finished high school, concentrated entirely among those who had some further education.

I must add a footnote to these rather striking findings. The figures I have presented make no allowance for disguised unemployment resulting from more or less forced withdrawals from the labor force. Such withdrawals may have been significant among the least educated and among nonwhites, particularly in the older age group.

It is now time to stop. If my story has a moral, it is about as follows: We do live in a dynamic world, in a world

of apparently accelerating scientific and technological change. But in terms of some of the dimensions in which we are interested, radical change is not so evident. We may send men to the moon, but we must still face the old problems of maintaining aggregate demand, of stimulating investment incentives in private industry, of adjusting our heterogenous labor supply to shifts in the pattern of employment, of insuring that public investment in education and a broad array of other forms of social wealth grow at an appropriate rate and in the most socially desirable forms.

Our economic system is marked by change—but also by continuity and inertia. We have experienced a scientific revolution. We seem to be in the midst of a technological revolution. But on the economic and the social side, now, as for a long time in the past, the appropriate word seems to have been "evolution"—and not infrequently painful evolution, at that.

Thank you.

NOTE: Dr. Gordon's address is an adaptation and revision of a paper given at a conference on *Space, Science and Urban Life*, and published in a volume with that title by the National Aeronautics and Space Administration (Washington, D.C., 1963).

DISCUSSION PERIOD

Moderator—Dr. Herbert Stein, Director of Research
Committee for Economic Development

DR. STEIN: Thank you, Dr. Gordon. The lesson of your talk reminds me of the remark that Eve is said to have made to Adam as they left the Garden of Eden: "We do indeed live in a time of transition." Now, as I understand my function here today, it is to moderate if you agitate and agitate if you are moderate. With that in mind, I invite questions from the floor.

FROM THE FLOOR: Dr. Gordon, have you attempted an experiment with the data on the apparent squeeze-out, particularly of teenagers and nonwhites, to see how much effect level of education has on level of unemployment?

DR. GORDON: I haven't actually tried to add in an estimate of the disguised unemployment for teenagers or for nonwhites or for the worst educated and then recompute these measures, if that is what you mean. If you will give me an official, shall I say, BLS figure on how many people in each age, sex, color, and education group have been forced out of the labor force, which I can add in as disguised unemployment, then I would know where to begin.

From one study by Bowen, at Princeton, I get one estimate. In the Clark subcommittee on manpower report, there is a global overall estimate of total disguised unemployment. Mr. Teller, of the Federal Reserve Board, can suggest another figure, from his regressions. I simply don't know how much. In view of other changes that have been taking place—for

example, in social security, private pension plans, the effect of increased pressure to stay in school—I'm not sure if I'd want to use estimates based on past regressions.

There is some disguised unemployment. My figures here probably underestimate the structural change. But I wanted to emphasize that they show that the least privileged groups (except for the new entrants and, last year, the teenagers) have not been steadily contributing more to unemployment than to the labor force. To me it means we have to do more thinking about the impact of structural change and perhaps take a new look at how much labor mobility there really is in the job market. My figures probably wouldn't look so dramatic if I added in some disguised unemployment, but until I get an official estimate from somebody, I don't know how much to add in.

FROM THE FLOOR: Dr. Gordon, your formulation suggests a linear relationship between contribution to labor force and contribution to unemployment. Is it possible that this may not be a linear relationship and that, for example, the demographic factors which resulted in relative scarcity in the labor force of adult males, may have had a disproportionate effect in keeping down their unemployment rate? On the other hand, the influx of youngsters had a disproportionate effect in raising theirs.

DR. GORDON: This is quite true. Not wanting to take too much time on what might be called the definitional and methodological side of this, I didn't elaborate as much as I might have. But you tempt me so let me go on for at least a minute. I can think of one extreme where a completely homogeneous labor force in which everyone, regardless of sex, age, skill, or color, has equal access to the jobs that are available. In that case, if you use the conventional divisions, presumably you will find unemployment rates equal no matter how you subdivide the labor force. This might be taken as a model of the complete absence of any structural component in unemployment, however high or low total unemployment is relative to the labor force.

Moving away from that extreme, one may next take a case in which one has what is usually referred to as full employment, in which there is no unemployment except for "a minimum frictional" amount including seasonal. Now, this minimum frictional unemployment may vary quite widely among groups. In view of the mobility of teenagers, you would expect frictional unemployment to be relatively higher among them than among male heads of families, for example. Or to take the seasonal element, among construction workers you would expect that the seasonal contribution to frictional unemployment would be greater than among office workers. That alone, then, would give you differential unemployment rates by groups.

Going still further away from the ideal of complete uniformity, consider what we usually think of as structural unemployment. In some sectors there will be relatively high unemployment rates, with unemployment in excess of vacancies over and above the frictional minimum. The reverse will be true in other sectors. This can yield, at least conceptually, relatively high total unemployment rates of 5 and 6 percent, which are not easily reduced, let's say, merely through aggregate demand measures. The structural component can be particularly marked by age or along some other dimensions.

So, to come back then to your question--I grant that there is a structural component in frictional unemployment and in seasonal unemployment. This tends, under any set of favorable conditions, to make for differential unemployment rates. Is this what you are getting at, or do you want me to go further and say that, if you sum this measure for the entire labor force, it will rise and fall with the overall unemployment rate but not linearly? If that is your point, I might call your attention to one thing which isn't evident from the formula. If you put a sigma sign on the outside and sum that measure for all sectors along a particular dimension, say all age-sex groups, this is the same thing as a measure of absolute dispersion; it is an average deviation, but divided by the overall unemployment rate. So, it does not bear a linear relation to the unemployment rate; it is divided by it. I recently have been experimenting with scatter diagrams and time series charts to study the relation of this measure to the overall unemployment rate.

This measure summed overall by age-sex occupation groups, for example, shows an interesting characteristic. It does not rise, as some of my early critics through it would, with total unemployment. If anything, the fact that it is, in effect, divided by the unemployment rate is almost too strong a correction, but there is also clearly a lag effect. If you get a long boom as in 1955–57, at the same unemployment rate, this thing shifts in a more or less predictable way. The nature of the relationship with the overall unemployment rate is, thus, not clear to me.

FROM THE FLOOR: I unfortunately was delayed in getting here so I didn't hear all your remarks, Dr. Gordon, but I wonder whether you gave some attention to the growth of a fairly important component, the engineers and scientists, in the industrial labor force. When you spoke about 20 years of economic and industrial change, did you comment about this, particularly in view of the fact that such a large portion of the employment in this category is in a sense controlled by the prospects of political power, where the government supports perhaps 75 percent of total research and development?

DR. GORDON: No, I had nothing specifically to say about it. This is hidden in a broader group, scientific-technical, in the occupational table which is listed here. Indirectly, I referred to the marked shift that has occurred in that direction. I did not make any specific comments about the obvious degree to which it is tied in with something I did talk about—the very large increase in Federal expenditures, especially defense expenditures, over the last 20 years. This is an area in which I am not an expert. I know that here in the Department of Labor, a study has been going on projecting the demand for this type of personnel.

About the only truly individual, personal, and highly opinionated remark I can make at the moment is this: My general impression is that the warnings about scarcity here are considerably exaggerated. It would take a real expansion of demand to demonstrate to ourselves how much hoarding of this group of workers has been going on by employers.

DR. STEIN: May I ask if I understood the last part of your answer to an earlier question? Are you saying there is reason to think that the change in the structural unemployment that you revealed here is structural and not cyclical, so that we have reason to think that if unemployment were to decline now to 4 percent, the pattern of these differences would not revert to the pattern we had in 1956?

DR. GORDON: Not necessarily. I would hate to have to predict merely from limited past experience. To repeat what I said earlier: The fact that this is, in effect, a measure of average deviation divided by the overall unemployment rate (that can be demonstrated algebraically) puts in such a strong correction factor that a reduction in the unemployment rate might reverse the trend slightly, and my measure might increase. But I would not guarantee that this would happen. But the point I want to make clear, particulariy in view of comments that were made about an earlier presentation of my talk in a journal article, is that you can't simply say that of course this measure will go up and down with the overall unemployment rate. This does not follow.

FROM THE FLOOR: I noticed in your remark on the relationship between the economic data you presented and technological change, that you seem to accept the premise that national income accounts for, or is in some way an adequate reflection of technological change. Will you comment on the thought that much technological change is qualitative in nature and national income accounts really don't take this into account properly. As an illustration of what I am getting at: It is perfectly possible that investments in capital expenditure are reduced by purchasing a device that has a labor impact effect.

DR. GORDON: So far, I couldn't agree with you more. I have presented here an arbitrary collection of tables. Some of them have to do with the national income accounts and emphasize the total spending aspect. Some refer to physical volume of output—for example, the measures having to do with rate of growth of output by industrial sector. And some have to do with employment and unemployment, which are functionally related to real GNP measures but are not directly derived from them.

You raise indirectly an extremely interesting question on which economists have spent some time, but not nearly enough. Have we recently been going through a stage of capital-saving innovation as well as labor-saving innovation? And to what extent does this make the problem of maintaining an adequate level of demand all the more difficult? If this is the inference of your question, I certainly agree with you. This is a real problem to which we don't yet have detailed answers.

We don't know what shifts in the marginal efficiency schedule result from these technical changes. We don't know the elasticity of the function with respect to interest rates, tax incentives, and such other things. Therefore, if it is true that technological change in broad sectors of the economy means that we now get given increases in output with a smaller amount of investment than before, what other things can we do to stimulate other types of spending? Should we stimulate spending, for example, through further reductions in personal income tax or increases in government spending?

FROM THE FLOOR: Dr. Gordon, I'll assume that you are correct in saying there has been very little worsening of structural unemployment since 1956 for most of the groups we normally consider, except those with no previous work experience. In view of this, what effect do you expect of recent legislation designed to attack the structural side of unemployment—the MDTA, the ARA, and so forth. Would we be better off attempting to channel our resources towards stimulating aggregate demand as a means of combating unemployment?

DR. GORDON: Are there any holds barred? I won't make an answer as barbed as I might. I said these measures suggest that the structural unemployment problem had not significantly worsened except for new job entrants since the mid-fifties. But I also said, and I should have emphasized it more, that we have always had a very serious structural unemployment problem in this country.

I find it disgraceful, as an American citizen, that the Negro unemployment rate has always been two or more times the national rate. We are doing a poor job in placing kids getting out of school; their rate is two and a half times the

national rate. The fact that it is two or two and a half times as high to start with is already bad enough. But when we have apprenticeship programs geared to color discrimination, as an example; when we have kids dropping out of school and not receiving adequate training; when we have various types of shifts in the composition of demand for output, and technological change that makes skills obsolete, there is plenty of room for MDTA's and ARA's, and a lot more than we are now doing.

Senator Clark's subcommittee majority report said that this country should aim for an unemployment rate of 3 percent by 1968. We aren't going to get a 3 percent unemployment rate just through aggregate demand measures. We are going to get a 3 percent unemployment rate only if we increase the mobility of the labor force and qualify the less privileged members of that labor force for the jobs that are available at a high level of aggregate demand. Forgive me for seeming a little strong in my answer.

FROM THE FLOOR: I would like to ask Dr. Gordon to go a little bit into the duration of unemployment as one of the elements of the assessment of the worsening of structural unemployment.

DR. GORDON: For those unemployed 15 weeks or more I applied the same breakdown, by industries, and there was no increase in concentration of the long-term unemployed in manufacturing or in the combined broader group that we might call industry. And there was no increased concentration of the unskilled among the long-term unemployed.

FROM THE FLOOR: Dr. Gordon, will you pursue a question which I think is much more important than whether structural unemployment has or has not increased? What do we do about unemployment to bring it back down and what does it take? You have suggested that this 3 percent unemployment rate can't be reached by aggregate means.

I wonder if you have a point at which you think aggregate demand can be reached and then a point at which the structural kind of programs have to take over? Do you have

estimates on the rate at which the economy has to grow in order to keep us where we are and perhaps reduce unemployment to 3 percent or 4 percent?

DR. GORDON: I think there ought to be some rules of the game, because that was a deliberately loaded question. I think you have seen a couple of very preliminary work tables in which I have been trying to derive very preliminary and tentative answers to the question you are raising.

The way the Clark subcommittee left it in its report made me personally very unhappy. Let us take this beautiful global figure of 3 percent. It looked so beautiful compared to what we have had for so long. I asked myself what specific unemployment rate would we have to have for each occupational, age, sex, and color group to have an overall rate of 3 percent. I am still playing around with the numbers and haven't gotten too, if you will forgive me, the gut of the problem: How do we reach the unemployment rates that we set as our goal? For example, I don't see us getting a 3 percent overall unemployment rate with a nonwhite unemployment rate higher than 4 percent. We never have had it. I don't think we will have it by 1968.

You tell me what to do with a large fraction of 180 million Americans and a significant fraction of the two Houses of Congress, and then I might be able to tell you how to get the nonwhite unemployment rate down to 4 percent.

DR. STEIN: As I understand these tables, I would guess that the nonwhite unemployment rate must have been about 8 percent in 1956 when we had a 4 percent overall unemployment rate.

DR. GORDON: In 1956, yes. These tentative calculations I have been making are based on 1953, when the rate was down around 3 percent, rather than 4.3 percent or 4.2 percent in 1956–57. The definitions were changed at the beginning of 1957, so that an unemployment rate slightly under 3 percent in 1953 has to be raised to 3.2 percent, or something like that. Adjusted to present definitions, I believe that the nonwhite unemployment rate was about 4.5 percent in 1953,

when the overall unemployment rate was just over 3 percent. The relative position of the nonwhite worsened significantly between 1953 and 1956 or 1957. It has stabilized since then.

My own judgment, not based on my fancy regressions or anything of that sort, is this: If we were to have a movement now from an overall unemployment rate of 5 percent, over a period of 4 years, for instance, back down to 3 percent, we would need far more than the Civil Rights Act and the other special programs that are now going on to bring the nonwhite rate simultaneously down from approximately 10 percent to 4 percent.

FROM THE FLOOR: Let's shift back a bit to the question of productivity advance. You noted that productivity rates haven't jumped as sharply as might be anticipated from growth in scientific and technical manpower. You referred to the hoarding aspect or overhead aspect of this occupational group.

What other factors do you think may have retarded the productivity rate or held in check the anticipated step-ups? Do you think some of these factors might diminish to the point where there would be somewhat more of an explosion of productivity advance?

DR. GORDON: Well, one factor which I mentioned in passing is this: The faster the shift from commodity production to services, the slower is the overall increase in productivity. In most of the service industries, productivity increases are not taking place at the rate at which they are taking place in commodity production and in public utilities and some branches of transportation. Thus we have two sets of forces at work which are bringing about marked changes in the pattern of demand for labor in relation to labor supply. We have differential trends in productivity going on simultaneously with a marked shift in the pattern of demand.

Remember, you have to take these two things together, to arrive at what happened to manufacturing employment after about 1953. One alone does not explain it. It was not merely a rapid increase in productivity and a shift within

manufacturing from semiskilled assembly line types of workers to more highly skilled white-collar and technical types of workers.

That was one type of change going on. But there was also a marked shift in the pattern of demand. Consumers in particular were using increments of income on services rather than on manufactured products. It is a combination of those two things that has helped to give us the changes that have occurred.

It is also interesting to note the shift that I passingly referred to between what happened between 1957 and 1960, on the one hand, and what has happened since 1960, on the other. We were pretty well satisifed with overall rates of increase in productivity in the nonagricultural sector up to the midfifties. The complaints came later, and we tried to associate them somehow with what was happening to unemployment.

Well, the real retardation in productivity was only during the first of these few years. It was clearly associated with a large amount of excess capacity, very clearly to me at least. I don't know whether Dr. Stein would agree with me. We had what we used to call an overinvestment boom during the years 1955–57. Some of the capacity that was put in then was not intensively utilized during the subsequent years. This discouraged investment, held down demand, and tended generally to lower profits.

I think it would require more time than I probably should take to hypothesize about how employers adjusted to the shock and to the slackening in the rate of expansion of demand, so that productivity finally began to increase more rapidly again, particularly after the short 1961 recession.

But productivity in the commodity producing industries has been moving up quite rapidly in the last 2 years, in a way characteristic of the first half of a typical business cycle. I don't know to what extent to count on its continuing at the rate at which it has been increasing during these last 2 years.

DR. STEIN: May I add a kind of stick-in-the-mud view of economic history here? When anticipations are dissappointed one must usually look for the explanation in the possibility that the anticipations were not well founded in the first place. Given what we seem to know about factors influencing the rate of growth of productivity, they seem to have a kind of glacial character. Changes, annual or even decade changes, in the stock and character of capital (physical and human) are always relatively small over the period. It is probably unwise to expect the trend to change radically on the basis of observation of certain rather glamourous inventions or spectacular events which make news.

FROM THE FLOOR: Dr. Gordon, do you want to touch on the role of the public sector, and Galbraith's idea of expanding government participation—building new hospitals and roads and schools, and urban renewal?

DR. GORDON: Can this be turned into a political session? Let me put my own personal views and value judgments on the table. The area of public needs which can be met only by the public sector are so large, so unsatisfied, that had the Government asked me if I would prefer to take the tax cut or have it go into additional public expenditures in the directions you suggest, I would have answered that it should go into the increased expenditures.

I have spent a good part of the last year comparing what might be called the social preference functions as they manifest themselves in dominant public opinion in the United States and in Western European countries. Suppose you try to explain the balance we arrive at between a certain degree of price stability and a certain level of employment, for example, and the combination that the United Kingdom or France or Germany or Sweden arrives at. I find that it can't be done unless I insert into the American welfare function two variables which the Europeans apparently, even in conservative circles, hardly know exist. One is the size of the national debt, and the other is the rate of change in Federal Government expenditures.

One of my favorite pastimes in Europe last year, particularly in Germany—which is supposed to be the ideal of the

conservative, free market approach to these questions—was to ask businessmen: "What is the size of the national debt in your country today?" And, "To what extent is the federal budget in deficit and by how much?"

The typical answer to both questions was, "I don't know, and should I care."

DR. STEIN: May I ask a further explanation about your preference for increased public expenditures. Is your preference for the increased expenditure approach, as compared with the tax cut approach, based on a judgment of their relative effectiveness in curing the unemployment problem? Or is it based on a judgment about the relative values of resulting output that would be obtained by the two methods, assuming that each would result in more output?

DR. GORDON: A very good question. It was more on the point of social preference, combined with some uncertainty as to the elasticity of private investment with respect to a given size tax cut. I didn't mean to imply that private investment plus consumer spending could not rise enough to push up aggregate demand to bring the unemployment rate down perhaps to 4 percent.

And let me say also that I didn't intend to express a preference on the appropriate division of labor as among Federal, State, and local expenditures. Sometimes our customs, our system of government, and so on, suggest that certain things greatly needed ought to be done by State and local governments rather than by Federal. I would have been quite happy to see some system whereby, let's say, part of the recent tax cut had taken a form of concession to the various States.

FROM THE FLOOR: I wonder if you would comment on the Killingsworth hypothesis that you can't reach full employment because you reach bottlenecks no matter how much government spending there is. Secondly, you might touch on Clarence Long's notion that since, historically, it has taken about a 6 percent price rise a year to get full employment, we will not tolerate that much price rise now and, therefore, cannot get the full employment?

DR. GORDON: My answer on the Killingsworth position is in two parts: One, as my figures suggested, I do not see the structural deterioration that he alleges has occurred during the recent period of high unemployment. Whatever deterioration occurred of the sort he alleges came in the early fifties, when we had 4 percent unemployment or less, and not during the period of high unemployment.

Further—now going on to the future—the alleged bottlenecks are in occupations in which there has been since the midfifties some relative loosening rather than tightening. Differential unemployment rates in the skilled technical groups have risen slightly faster than the overall unemployment rate. This is not generally recognized, but it is true. Those of you who have been following the figures for the last 18 months more closely than I have can tell me if I am wrong.

I think Killingsworth is flatly wrong on the extent to which an overall expansion in demand will absorb blue-collar and semiskilled workers, either by their moving into other occupations and industries or by reabsorption into the areas in which they were previously employed.

In general, during the last year and a half of accelerated expansion, I have not seen these bottlenecks arising, and there has been a very encouraging decline across the board in unemployment. We have had declining unemployment and rising employment among blue-collar workers. Killingsworth has not touched on this except indirectly through education, but the new entrant and the teenager may be a special problem. However, I still don't buy the bottleneck hypothesis. Of course, we certainly will have some special problems involving the high school dropouts and that sort of thing.

Now, on Clarence Long and the idea of how much you have to pay in price inflation for a given degree of unemployment, to reduce unemployment by a given amount. If I may again use the blackboard, let us use a Phillips curve type of presentation and put rate of price increase up here and the unemployment rate down here. Call this absolute price stability or no price change. Before the war, we could have bought absolute price stability at an unemployment rate of 4

percent, for instance. But we have had structural changes, not just in the economy of the United States but in Western Europe also, since then. Today, therefore, we are operating on a Phillips curve so that absolute price stability will cost us 6 percent unemployment, maybe.

Now, I know no country in the world, including the United States and Western Germany, that is prepared to pay for the indefinite future a price of 6 or 7 percent unemployment for absolute price stability. Certainly Germany is not, and we haven't been. There is some upper limit on the price rise, which is loosely referred to as being of the order of 2 or 3 percent in the Western World. We say 2 percent or less in this country as long as other countries' prices are rising. France, Italy, the United Kingdom, and others, settle cheerfully for 3 and 4 percent.

Now, this kind of structural change is not a matter of technological change increasing the amount of structural unemployment. Downward rigidity on wages, even where there is excess unemployment; the bargaining power of unions; and so on, clearly play an important role here.

Now, what we have been doing is operating on a curve higher, presumably, than the prewar curve. During the last 3 years, for instance, we have been able to settle for roughly a $1\frac{1}{2}$- or 2-percent price increase, and about 5 percent unemployment, approximately.

FROM THE FLOOR: Dr. Gordon, will you comment on the device of shortening the workweek to attack structural unemployment?

DR. GORDON: Very bluntly, I don't like it. I am an old-fashioned enough economist, and I got my first training on what might be called the neoclassical school before Keynes came along and corrupted me. But I think we are still poor enough so that a steadily rising output, not just per man-hour but per man, is still a reasonable goal for our kind of society. I would first like to see if there are not ways of increasing the demand for man-hours. But perhaps I am so badly biased that my opinions aren't even worth the short time I am taking

to enunciate them. It may be just the soft life I lead, but I don't think 40 hours a week kills a man. The only excuse I see for going much below 40 hours deliberately is to make work, and I would like to find ways to make work that will also be productive.

FROM THE FLOOR: Actually, the shorter workweek effort is aimed at the same goal you have expressed, and I suspect it is not sought as an alternative to increased production.

But on the hours point, we have in fact been seeing a shift in hours and patterns in terms of a relative or comparatively larger rise in voluntary part-time employment. And in fact, the largest growth has been in the sectors which have had the greatest hours flexibility. Would you speculate about some of the implications of this move toward increasing flexibility of our scheduling, as tied in with the youngsters in work-school combinations, and yet still increasing labor force participation?

DR. GORDON: You may be able to tell me how much this is a product of the shift in composition of demand. If we had not had the accelerated rise in trade and service, a large part of this flexibility would not be possible today. The flexibility you are talking about is in good part that which married women have made possible, with their greatly increased labor force participation.

In contrast, take the automobile case. The recent Chrysler contract illustrates some of the points involved. When you still get tight production schedules, where a major strike can almost occur over a demand for 12 minutes additional time break during the day, or whatever it was, the same kind of flexibility apparently does not yet exist.

FROM THE FLOOR: Dr. Gordon, assume a combination of a tax cut increasing consumer demand by $11.5 billion, and an increase of Federal expenditures for structural programs of roughly $1 billion. Now, would you find this combination acceptable, or would you make some alterations in the proportions for demand and structural measures?

DR. GORDON: Again, and this is pure, personal preference, I would have preferred to see more of that money spent either by the Federal Government or by State and local governments, on various types of social expenditures. I prefer this to seeing it go into a new automobile, or a more expensive vacation, or the increase in the personal savings rate, which seems to have taken place during this period.

These to me are rather useful, pleasant, but marginal increases in someone's welfare. I would have recommended that more of it go into some of the Federal programs for education, for social and medical care. I'd like to see more of the kind of thing that is going on, on a picayune basis, in New York, in which underprivileged children from the slums are taken at the age of two or three into a type of social acclimitization program, to prepare them for school. These things to me are important enough that I am prepared to put some more of my own tax money into it.

But, we professionals here are not supposed, most of the time, to display any blood in our veins. This sort of conversation leaves me uncomfortable in this kind of semipublic professional audience because you are now asking me to answer you not as a professional economist, but as Aaron Gordon, ordinary human being. I feel strongly about some things, and in this respect I am not a damned bit more competent, probably less competent, than anyone else in this room.

DR. STEIN: May I add that it seems to me there is a possibility that a combination of $11 billion worth of general demand-increasing measures and $1 billion of adaptive measures would have a different effect on the economy than $9 billion worth of general demand measures and $3 billion of adaptive measures. If we knew how to use the billions effectively for adaptive measures, I think that this would yield a bigger increase.

FROM THE FLOOR: Dr. Gordon might want to know that Mr. Harvey Segal of the Washington Post has just done an analysis of expenditures after the tax cut. He finds that in the last three or four quarters the marginal consumption from the tax cut is less than under the previous two tax cuts. This

might bear out your contention that it would be better to have additional government expenditures rather than a bigger tax cut.

DR. GORDON: I think it is really too early to say, and there may be a cumulative effect here. We have to combine the consumption function in this case with an unknown number of distributed lags, and the total number within a year may look different from what it does so far. I am not arguing against myself; I am saying that even if the increase in consumption were all we expected, my social preferences with respect to a given level of output might lead me to prefer that the increment of output go somewhere else.

DR. STEIN: Dr. Gordon, you introduced the word "wages" here about 15 minutes ago in connection with the Phillips curve. I wonder if you have any observation on the possibility that there is something in the structure of American wages, as distinct from the annual rate of change, which has something seriously to do with the concentration of unemployment in certain categories, a concentration which is apparently larger than in some other countries. Is it possible that with a different structure of wages, that is, with relatively lower wages for people without previous work experience as compared with experienced workers; relatively lower wages for young people as compared with older people; relatively lower wages for people with little schooling as compared with people with more schooling; we might have a different concentration of unemployment?

DR. GORDON: I am extremely grateful to Dr. Stein for asking me this question. I was going to be very unhappy if the meeting ended only with a tone which I gave it by virtue of the questions which had been asked me. Up to this time you all unquestionably pictured me as a wide-eyed, innocent, other-worldly pseudo-liberal.

Let me begin by saying emphatically, yes, to your question. And I will elaborate by telling a personal story. For a number of years I was President of the Consumers Cooperative of Berkeley, the biggest grocery retail chain in the Berkeley area. It has approximately seven very large supermarkets.

Ten years ago we were able to supply a considerable number of part-time jobs to high school kids as carry-out boys. The retail clerks union forced us to stop it because we had to pay them exactly the same rate we paid the skilled checkers. Therefore, if we were going to have to pay that rate, we preferred to take full-time skilled checkers and use them in the best way, and we cut down the carry-out function to the bare minimum without too big an impact on our business.

I think the point Dr. Stein is raising is extremely important, and one we all need to give attention to. I suppose that the focus of attention has to be on the unions, since this is where the resistance to increasing wage differentials will occur.

Incidentally, Professor George Hildebrand of Cornell gave a very interesting paper on this at an international conference in Geneva on automation and unemployment, just a month ago [August 1964], in which he posed precisely the same problem. He urged much more research on the subject but suggests, on the basis of preliminary inquiries of his own, that we have to think very seriously about modifying conventional minimums and adapting wages more flexibly to particular cases like the unskilled, the teenager, and so on.

FROM THE FLOOR: What do you think would be the effect of such policies as you are now suggesting on total employment, on wage standards generally, on total aggregate demand?

DR. GORDON: I think it depends, of course, on how it is done and to what extent what one might call strong opponents of organized labor get hold of it and use it for ends which I do not approve of.

I have made some inquiries in my own local area, on the opportunities that would exist through State employment offices for part-time employment of casual help and youth in yard, garden, and household types of jobs. These are increasingly being done by the man of the family on his own, at lower "wages" than are now generally possible. The estimates I got surprised me. There is a very considerable elasticity of demand for this kind of part-time "odd" job.

FROM THE FLOOR: What industry is this?

DR. GORDON: Sort of caretaking around the house, minor repairs, which now you either do yourself or you have done by a licensed carpenter at quite a high rate, which the average householder is not going to pay if he thinks he can do it himself. I'm thinking of something that is more a matter of putting in a little muscle and some time, with hammer and nails and a little paint—work one could have done at $1 or $1.25 an hour, let's say, but not at $3 an hour.

Now, I realize the very difficult problems that are involved. But I would pose the question: Can in this case certain craft unions define certain areas in cooperation with local employment offices, so that for jobs on a part-time basis in which, for example, not more than X hours will be put in for any employer in a week, a rate less than the union scale may be paid?

FROM THE FLOOR: This area of work that you suggest though, Dr. Gordon, is an area in which so far as I know there is no minimum wage and unionization. You are talking about the householders wanting somebody to do a little something around the house. May I ask you to broaden it just a little bit into the domestic area. We're always talking about a lot of little things around the house that we'd like to have done by somebody but we can't get this kind of help. What is the institutional restraint that keeps us from being able to find these people? I assume there are people who want these jobs.

DR. GORDON: You are right in both correcting me on part of the facts and broadening the question. First, to remake my point: There are certain types of jobs—for example, a little bit of interior painting—which I would prefer to have done by someone who has done at least a bit of it, rather than get myself messed up doing a horrible job, only to wind up getting a professional union man at a high price.

But to come back to the general question, and you are quite right in raising it—I have heard considerable criticism of the employment offices in that they do not have enough of

a systematic program to get into every place from the bars and the saloons to the street corners, even in the evenings. In other words, they do not do enough to seek out the people who might be available for this kind of work, and then screen them sufficiently so that the householder has some confidence in hiring them.

Some of the people from the employment service here may want to jump on me with both feet, but I have talked to a modest number of people with some employment service experience on this. Their general feeling is that a systematic, intensive-enough program of this sort is not now going on.

FROM THE FLOOR: I have heard the employment service criticized quite the other way for going too much into these so-called marginal workers, and into marginal jobs, and not really working with the mainstreams, so to speak, of the job market activities and processes.

It seems to me that we still get back to the question of capabilities and qualifications of workers. Even in these kinds of jobs the capabilities are not just occupational skills. The employment service goes into such elements as punctuality, capability of working with others, observation of safety instructions—many of the basic things that are still pretty important in getting employment.

DR. GORDON: You make me ask a question quickly since I have got this group together. What are OMAT and the employment service doing about this kind of training in order to make more of these people available for the kind of jobs we are talking about?

FROM THE FLOOR: I am glad to report to you that at least in the last 10 months the emphasis has shifted very heavily to preoccupational training and prevocational training in terms of job market orientation. Particular attention has been given to disadvantaged youth in the hard-core categories, whom employers normally would be reluctant to hire.

FROM THE FLOOR: I'd like to ask Dr. Gordon to respond to part of the question which I asked previously—that

is, what would be the effect on the general level of wage standards when you substitute youth, at lower wages, for skilled workers?

DR. GORDON: It will certainly increase the total amount of employment of a certain broad category. Let's take as an example repair types of carpentry rather than new construction. The total amount of employment, total number of hours devoted to such work, would presumably increase with some differentials. The number of hours spent by union members at union rates on certain types of jobs that would now be done by others would decline. This would presumably lead to some decrease in employment among union members at union rates, which I am supposing would be considerably more than offset, not merely in total hours but in total compensation. I am assuming, in other words, an overall considerable elasticity in demand for this kind of labor.

Now, one could go further here and ask the same question that has been asked many times: Over the last 10 or 20 years, how much greater would be the employment for union carpenters or plumbers or electricians today if their rates had not gone up relatively as fast as their numbers, and so inflexibly as to types of jobs?

Although I don't know enough about this kind of job market to make specific recommendations, my guess is that had the advancement been a bit more modest and with some internal flexibility at least at the subcontracting stage, today there would be a lot more hours spent in these types of employment.

DR. STEIN: I think we have opened up a line of discussion which could be pursued for at least another 2 hours if not more, but it is time to close. Thank you very much, Dr. Gordon.

DR. GORDON: Thank you.

LIST OF PARTICIPANTS

Seminar participants included representatives of the following agencies and organizations:

Council of Economic Advisers

National Aeronautics and Space Administration

National Science Foundation

Office of Economic Opportunity

Selective Service System

Subcommittee on Employment and Manpower, U.S. Senate

U.S. Bureau of the Budget

U.S. Department of Commerce

U.S. Department of Defense

U.S. Department of Health, Education, and Welfare

U.S. Department of Labor

Battelle Memorial Institute

Brookings Institution

Center for Youth and Community Studies, Howard University

Committee for Economic Development

International Association of Machinists, AFL-CIO

National Headquarters Staff, AFL-CIO

Newhouse Newspapers

Retail Clerks International Association, AFL-CIO

United Association of Plumbers and Pipe Fitters, AFL-CIO

United Planning Organization

Washington Center for Metropolitan Studies

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